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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/642,546	08/17/2000	Brent Keeth	500644.01	7867

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EXAMINER

BRAGDON, REGINALD GLENWOOD

ART UNIT PAPER NUMBER

2188

DATE MAILED: 08/08/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/642,546

Applicant(s)

KEETH ET AL.

Examiner

Reginald G. Bragdon

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15, 16 and 18-27 is/are allowed.
- 6) ☒ Claim(s) 4, 7, 11 and 14 is/are rejected.
- 7) ☒ Claim(s) 1-3, 5, 6, 8-10, 12, 13 and 17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Information Disclosure Statement

1. The Information Disclosure Statements received 17 August 2000 and 06 December 2001 have been considered. Please see the attached PTO-1449(s).

Drawings

2. The drawings are objected to because:

There is no element "36" in figure 1 (see page 3, line 28);

There is no element "38" in figure 1 (see page 3, line 29);

In figure 3, "82" should be --80--.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "first", "second" and "third control" signals (claim 1) and the plurality of "complimentary input/output line pairs" (claims 4, 7, 11, and 14) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The abstract of the disclosure is objected to because it is greater than 150 words.

Correction is required. See MPEP § 608.01(b).

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

There is no antecedent basis in the specification for the “complimentary input/output line pairs”.

Claim Objections

6. Claims 1-14 and 17 objected to because of the following informalities:

As per claims 1-14, all instances, “the DRAM array” should be --the at least one DRAM array--.

As per claim 1, lines 8 and 16, “the SRAM array” lacks antecedent basis and it is not clear whether Applicant is referring to the “first” or “second” SRAM array of line 3. The Examiner suggests changing “the SRAM array” to --the first and second SRAM arrays--.

As per claim 1, “the SRAM array” in line 23 lacks antecedent basis and should be --one of the SRAM arrays--.

As per claim 3, line 1, “the block of DRAM array” should be --the plurality of blocks of the at least one DRAM array--.

As per claim 5, lines 7-8, “the SRAM array” lacks antecedent basis and it is not clear whether Applicant is referring to the “first” or “second” SRAM array of line 3. The Examiner suggests changing “the SRAM array” to --the first and second SRAM arrays--.

As per claim 6, line 1, “the block of DRAM array” should be --the plurality of blocks of the at least one DRAM array--.

As per claim 8, lines 15-16, 20-21, and 26, “the SRAM array” lacks antecedent basis and it is not clear whether Applicant is referring to the “first” or “second” SRAM array of line 3. The Examiner suggests changing “the SRAM array” to --the first and second SRAM arrays--.

As per claim 9, line 6, the “third control (signal)” lacks antecedent basis and should be --first and second control signals-- instead.

As per claim 10, line 1, “the block of DRAM array” should be --the plurality of blocks of the at least one DRAM array--.

As per claim 12, lines 15-16, 19-20, and 21, “the SRAM array” lacks antecedent basis and it is not clear whether Applicant is referring to the “first” or “second” SRAM array of line 3. The Examiner suggests changing “the SRAM array” to --the first and second SRAM arrays--.

As per claim 13, line 1, “the block of DRAM array” should be --the plurality of blocks of the at least one DRAM array--.

As per claim 17, line 2, --block-- should be added between “first” and “of”.

All dependent claims are objected to as having the same deficiencies as the claims they depend from.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 4, 7, 11, and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As per claims 4, 7, 11, and 14, Applicant has not disclosed that the “input/output circuit” comprises a plurality of “complimentary input/output line pairs”.

Allowable Subject Matter

9. Claims 15-16 and 18-27 are allowed.
10. Claims 1-3, 5-6, 8-10, 12-13, and 17 are objected to as set forth above.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ikeda et al. (2002/0006071) teaches a semiconductor memory device that includes a plurality of DRAM banks and a SRAM bank. When a DRAM bank is not being refreshed, then

Art Unit: 2188

data is written in both the DRAM bank and the SRAM. When a DRAM bank is being refreshed, then data is written in the SRAM bank and the DRAM is refreshed.

Leung et al. (5,999,474) teaches refreshing a DRAM array in a system including an SRAM cache. However, Leung et al. does not teach first and second SRAM arrays.

Furthermore, Leung et al. does not store data in the SRAM in response to the DRAM being refreshed. Instead, if there is a hit in the SRAM cache, then the opportunity is taken to refresh the DRAM array (i.e. the refresh comes as a result of accessing the SRAM cache, not the SRAM cache being accessed as a result of the refresh operation).

Taylor (6,172,927) teaches DRAM banks, each associated with an SRAM bank.

12. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

The fax phone numbers for the organization where this application or proceeding is assigned are as follows:

(703) 746-7238 (After Final Communications)

or

(703) 746-7239 (Official Communications)

(703) 746-7240 (For Status inquiries, draft communications)

and/or

(703) 746-5693 (Use this FAX#, only after approval by the Examiner, for "INFORMAL" or "DRAFT" communications. An Examiner may request that a formal page/amendment be faxed directly to them on occasion).

Hand-delivered responses should be brought to Crystal Park II, 2121
Crystal Drive, Arlington, VA., Fourth Floor (receptionist).

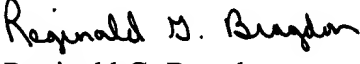
Art Unit: 2188

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reginald G. Bragdon whose telephone number is (703) 305-3823. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 4:30 PM and every other Friday from 7:00 AM to 3:30 PM.

The examiner's supervisor, Mano Padmanabhan, can be reached at (703) 306-2903.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

RGB
August 6, 2003


Reginald G. Bragdon
Primary Patent Examiner
Art Unit 2188